

REMARKS

Applicants appreciate the helpful conversations between Examiner Puttlitz and Applicants' representative during the phone interview of December 16, 2008. The enclosed amendments and remarks incorporate and highlight the amendments discussed in the interview.

In the present Office Action, all pending claims stand rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 6,861,544 to Curran et al. ("Curran"). In view of the current amendments and remarks, Applicants traverse the rejection as set forth herein.

Amendments

Applicants have amended the pending claims as follows. All amendments are supported by the specification and claims as filed.

As suggested by the Examiner during the interview, claims 1, 22, 45, and 58 have been amended to change the position of the element "at least one chemical reactant" to clarify that the at least one chemical reactant is present in the chemical reaction medium and not contained on the solid adsorbant.

As suggested by the Examiner during the interview, claims 11, 22, 29, 31, 32, 45, and 58 have been amended to clarify that the fluorous compound is "absorbed on the fluorous domain of the solid adsorbant." This amendment is supported in the specification at filed at page 7 at paragraph [0022] (see definition of "absorbed").

Claim 1 has been amended to include the elements of claim 9, thereby reciting the step "changing at least one reaction condition such that the solubility of the fluorous compound in the non-fluorous medium decreases and the amount of the fluorous compound absorbed on the fluorous domain of the solid adsorbant increases, wherein the changing at least one reaction condition is selected from the group consisting of adjusting a temperature, adjusting a solvent concentration, adding an additive, and combinations thereof." Claim 9 has been canceled and claims 10, 11, 12, and 13 have been amended to now depend from claim 1.

Claim 22 has been amended to include the elements of claim 28, thereby reciting the step "changing a first reaction condition from a first state to a second state, such that the solubility of the fluorous compound in the non-fluorous medium increases and the

amount of the fluororous compound absorbed on the fluororous domain of the solid adsorbant decreases; and . . . wherein the changing the first reaction condition is selected from the group consisting of increasing temperature, adding a co-solvent, adding an additive, and combinations thereof.” Claim 28 has been canceled and claim 29 has been amended to now depend from claim 22.

Independent claims 1, 22, 45 and 58 have each been amended to further describe the fluororous compound as comprising “at least one fluororous moiety having a formula $-(R)_n(R_f)_m$, where R is independently, the same or different, a hydrocarbon moiety, R_f is independently, the same or different, a fluororous domain, n is an integer equal to at least 0, and m is an integer greater than 0.” This amendment clarifies that the fluororous compound comprises at least one fluororous moiety including a fluororous domain, R_f. The structures of fluororous moieties are understood by those having ordinary skill in fluororous chemistry and the fluororous domain, R_f, is fully described in the application as filed, for example, at pages 9-10, paragraphs [0027]-[0028].

Claim 36 is amended to depend from claim 31 instead of claim 22. This amendment clarifies that the solid adsorbant is separated from the at least one chemical product after changing a second reaction condition such that the amount of fluororous compound absorbed on the fluororous domain of the solid adsorbant increases. This amendment is supported by the specification as originally filed, for example at pages 11-12 at paragraph [0033].

The amendments recited above have been submitted to clarify and further describe the subject matter of the claimed process. These amendments are fully supported by the specification and claims as originally filed and therefore do not present new matter. Applicants respectfully request entrance and consideration of the amendments.

Rejection under 35 U.S.C. § 103(a)

In the present Office Action, claims 1-4, 6-25, and 27-72 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 6,861,544 to Curran et al. (“Curran”). Applicants traverse this rejection as set forth herein.

Curran describes fluororous tin reaction components and methods for conducting reactions using the fluororous tin reaction components. (Curran, column 2, lines 48-65). After the reaction, the fluororous reaction components can be separated from the organic

reaction components by a standard fluorous separation technique such as a fluorous liquid-liquid based separation (e.g., extraction with a fluorous solvent) or a fluorous solid phase extraction or chromatography using a fluorocarbon bonded phase (e.g., chromatography with fluorous silica). (See, Curran, column 4, line 43 to column 5, line 2).

In contrast, the subject application presents methods for conducting a chemical reaction in a non-fluorous medium using at least one chemical reactant and a fluorous compound in the presence of a solid adsorbant containing a fluorous domain. (See for example, claim 1). In the claimed methods, the fluorous compound transitions between being absorbed on the fluorous domain of the solid adsorbant and being dissolved in the non-fluorous reaction medium by changing at least one reaction condition. For example in one embodiment, increasing the temperature of the system causes the solubility of the fluorous compound in the reaction mixture to increase and the amount of fluorous compound absorbed on the fluorous domains of the solid adsorbant to decrease. Likewise, for example, decreasing the temperature of the system causes the solubility of the fluorous compound in the reaction mixture to decrease and the amount of fluorous compound absorbed on the fluorous domain of the solid adsorbant to increase. The claimed methods allow for, among other things, the elimination of the need for fluorous solvents, the efficient delivery and/or separation of the fluorous reaction components, and the recycling of fluorous reaction catalysts and reagents.

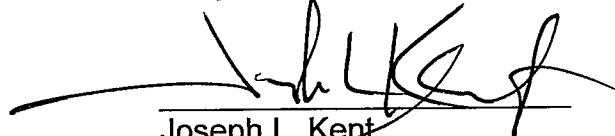
Curran does not disclose, either explicitly or inherently, conducting a fluorous reaction in the presence of a solid adsorbant containing fluorous domains. Further, Curran does not disclose controlling the solubility of a fluorous compound in a non-fluorous medium by manipulating at least one reaction condition. For example, Curran does not teach or suggest changing at least one reaction condition such that the solubility of the fluorous compound in the non-fluorous medium increases and the amount of the fluorous compound absorbed on the fluorous domain of the solid adsorbant decreases or such that the solubility of the fluorous compound in the non-fluorous medium decreases and the amount of the fluorous compound absorbed on the fluorous domain of the solid adsorbant increases. Thus, Curran does not teach, either explicitly or inherently, each and every element of the claims of the present disclosure.

CONCLUSION

Applicants submit that claims 1-4, 6-8, 10-25, 27, and 29-72 of the subject application recite novel and non-obvious methods of conducting a chemical reaction in a non-fluorous medium using a fluorous compound in the presence of a solid adsorbant containing a fluorous domain. Applicants respectfully submit that all pending claims in the subject application are in condition for allowance. Accordingly, reconsideration of the rejection and issuance of a Notice of Allowance is earnestly solicited.

If the undersigned can be of assistance to the Examiner in addressing issues to advance the application to allowance, please contact the undersigned at the number set forth below.

Respectfully submitted,

A handwritten signature in black ink, appearing to read 'J. L. Kent', is written over a horizontal line.

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